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* * * * * Welcome to STN International * * * * *

NEWS	1		Web Page URLs for STN Seminar Schedule - N. America
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NEWS EXPRESS			February 1 CURRENT WINDOWS VERSION IS V6.0d, CURRENT MACINTOSH VERSION IS V6.0a(ENG) AND V6.0Ja(JP), AND CURRENT DISCOVER FILE IS DATED 05 FEBRUARY 2002
NEWS HOURS			STN Operating Hours Plus Help Desk Availability
NEWS INTER			General Internet Information
NEWS LOGIN			Welcome Banner and News Items
NEWS PHONE			Direct Dial and Telecommunication Network Access to STN
NEWS WWW			CAS World Wide Web Site (general information)

Enter NEWS followed by the item number or name to see news on that specific topic.

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* * * * * STN Columbus * * * * *

FILE 'HOME' ENTERED AT 10:42:56 ON 25 MAR 2002

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COST IN U.S. DOLLARS	SINCE FILE	TOTAL
	ENTRY	SESSION
FULL ESTIMATED COST	0.30	0.30

FILE 'FSTA' ENTERED AT 10:44:04 ON 25 MAR 2002
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FILE 'FROSTI' ENTERED AT 10:44:04 ON 25 MAR 2002
COPYRIGHT (C) 2002 Leatherhead Food Research Association

=> s juice# or cider# or drink# or beverage#
L1 102424 JUICE# OR CIDER# OR DRINK# OR BEVERAGE#

=> s activated oxygen
L2 33 ACTIVATED OXYGEN

=> s l1 and l2
L3 3 L1 AND L2

=> d 1-3 all

L3 ANSWER 1 OF 3 FSTA COPYRIGHT 2002 IFIS
AN 1994(12):T0035 FSTA
TI Copper(II) ascorbate: a novel food preservation system.
AU Graf, E.
CS Tastemaker, 1199 Edison Drive, Cincinnati, OH 45216, USA
SO Journal of Agricultural and Food Chemistry, (1994), 42 (8) 1616-1619, 10
ref.
ISSN: 0021-8561
DT Journal
LA English
AB [A novel copper(II) ascorbate food preservation system is described.]
Addition of ascorbic acid (0.05-0.40%) and trace amounts of copper
gluconate (10-65 p.p.m.) to foods and **beverages** effectively
removed oxygen dissolved in the food within 1-5 min and depleted the
headspace oxygen within a few days. [Foods tested were Mexican salsa,
glucamole, and pizza sauce.] Unlike other cations tested, copper catalysed
ascorbate-mediated reduction of oxygen to water without the concomitant
generation of hydroxyl radicals and other **activated**
oxygen species. Copper(II) ascorbate protected foods against lipid
peroxidation, discoloration, and other oxidative damage. It also inhibited
bacterial growth thereby increasing microbiological stability of
high-moisture foods.
CC T (Additives, Spices and Condiments)
CT ADDITIVES; ANTIOXIDANTS; ASCORBIC ACID; BAKERY ADDITIVES; COPPER;

FLAVOURINGS; PRESERVATIVES; SALTS; SAUCES; ASCORBATES

L3 ANSWER 2 OF 3 FROSTI COPYRIGHT 2002 LFRA
 AN 551278 FROSTI
 TI Sterilization.
 IN Castberg H.B.; Chant N.A.
 PA Elopak Systems AG
 SO European Patent Application
 PI EP 1080734 A2
 AI 19890504
 PRAI United Kingdom 19880505
 DT Patent
 LA English
 SL English
 AB Packaging containers may be sterilized by treatment with UV radiation in an ozone atmosphere. Use of an appropriate wavelength allows all microorganisms present to be destroyed. The ozone may be produced by subjecting air to a photoflux in the vacuum UV range. The oxygen in the air is ionized and forms a variety of **activated oxygen** compounds with a higher oxidation potential than that of ozone produced by classical methods. The process may be used to sterilize the inner surfaces of **beverage** containers such as the cartons used for long-life milk and orange **juice** in a relatively short period of time.
 CT ACTIVE OXYGEN COMPOUNDS; **BEVERAGE** CONTAINERS; CARTONS; CONTAINERS; DECONTAMINATION; EUROPEAN PATENT; OZONE; PACKAGING CONTAINERS; PACKAGING PRODUCTS; PATENT; PROCESSING; STERILIZATION; UV IRRADIATION
 DED 3 May 2001

L3 ANSWER 3 OF 3 FROSTI COPYRIGHT 2002 LFRA
 AN 354233 FROSTI
 TI Copper(II) ascorbate: A novel food preservation system.
 AU Graf E.
 SO Journal of Agricultural and Food Chemistry, 1994, 42 (8), 1616-1619 (10 ref.)
 DT Journal
 LA English
 SL English
 AB The various approaches that have been used to inhibit oxidation in food and **beverage** packages are briefly reviewed, together with their disadvantages and safety status. The authors describe the characteristics and food applications of a novel, chemical, oxygen-removing system designed using GRAS- and FDA-approved ingredients. The system contained ascorbic acid and copper gluconate. In tests, it effectively removed dissolved oxygen within 5 min, and depleted headspace oxygen within a few days. Hydroxyl radicals and other **activated oxygen** species are not produced, as is the case with other oxygen-scavenging cations. The authors discuss the potential of the system, which has the additional advantage of antimicrobial activity.
 SH ADDITIVES
 CT ANTIOXIDANTS; ASCORBIC ACID; COPPER GLUCONATE; EQUIPMENT; EXTRACTION; EXTRACTION EQUIPMENT; EXTRACTION SYSTEMS; MIXTURES; NEW PRODUCTS; OXYGEN; OXYGEN SCAVENGERS; SCAVENGERS; SYSTEMS
 DED 20 Oct 1994

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LA English
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 SO European Patent Application
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 DT Patent
 LA English
 SL English
 AB Packaging containers may be sterilized by treatment with UV radiation in an ozone atmosphere. Use of an appropriate wavelength allows all microorganisms present to be destroyed. The ozone may be produced by subjecting air to a photoflux in the vacuum UV range. The oxygen in the air is ionized and forms a variety of **activated oxygen** compounds with a higher oxidation potential than that of ozone produced by classical methods. The process may be used to sterilize the inner surfaces of **beverage** containers such as the cartons used for long-life milk and orange **juice** in a relatively short period of time.
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 DED 3 May 2001

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 DT Journal
 LA English
 SL English
 AB The various approaches that have been used to inhibit oxidation in food and **beverage** packages are briefly reviewed, together with their disadvantages and safety status. The authors describe the characteristics and food applications of a novel, chemical, oxygen-removing system designed using GRAS- and FDA-approved ingredients. The system contained ascorbic acid and copper gluconate. In tests, it effectively removed dissolved oxygen within 5 min, and depleted headspace oxygen within a few days. Hydroxyl radicals and other **activated oxygen** species are not produced, as is the case with other oxygen-scavenging cations. The authors discuss the potential of the system, which has the additional advantage of antimicrobial activity.
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 DED 20 Oct 1994

=> s oxygen

L4 14262 OXYGEN

=> s uv or ultraviolet or ultra violet

L5 11110 UV OR ULTRAVIOLET OR ULTRA VIOLET

=> s 11 and 14 and 15
L6 35 L1 AND L4 AND L5

=> d 1-35 all

L6 ANSWER 1 OF 35 FSTA COPYRIGHT 2002 IFIS
AN 2001(10):H2552 FSTA
TI [New installations: Privatbrauerei Diebels, Issum, Germany. Water recycling in bottle washing.]
AU Anon.
SO Brauwelt, (2001), 141 (25) 964, 966
ISSN: 0724-696X
DT Journal
LA German
AB A new water recycling system added to the existing bottle washing machine at the Privatbrauerei Diebels brewery in Issum, Germany, is described. Rinse water from bottles leaving the last of 3 successive spray heads is collected, screened, filtered and **UV** sterilized before being fed back to the start of the bottle rinsing process. Process control is automatic; if a malfunction occurs, the bottle washer is switched to operation with all fresh water. The equipment is compatible with all cleaning agents and disinfectants used in the **beverage** industry. Quality of the recycled water differs little from that of fresh water; its chemical **oxygen** demand is only 11-12 mg O.sub.2/l. Microbiological quality, surface tension properties, etc. of bottles washed by this method are good. Water economy of 30-50% may be achieved, depending on operating conditions.
CC H (Alcoholic and Non-Alcoholic Beverages)
CT BOTTLES; BREWERIES; CLEANING; ECOLOGY; WATER; RECYCLING; WASHING

L6 ANSWER 2 OF 35 FSTA COPYRIGHT 2002 IFIS
AN 2001(08):H1903 FSTA
TI SOLAIR disinfection of coliform bacteria in hand-drawn drinking water.
AU Meyer, V.; Reed, R. H.
CS Dep. of Chem., Technikon Northern Gauteng, Private Bag X07, Pretoria North 0116, South Africa. Tel. (012) 799 9098. Fax (012) 7999022. E-mail vermey(a)mweb.co.za
SO Water SA, (2001), 27 (1) 49-52, 16 ref.
ISSN: 0378-4738
DT Journal
LA English
AB SOLAIR is an alternative disinfection method utilizing natural sunlight (specifically **UV-A** and **UV-B** radiation) and **oxygen** (from atmospheric air) to damage, inactivate and/or kill the coliform bacteria found in contaminated water. It is a natural process (virtually self-purification) with no need to add any potentially hazardous chemicals or to use sophisticated and expensive equipment. The SOLAIR process was applied in a typical South African scenario (i.e. a rural village) where water for domestic use is drawn from an unlined and heavily contaminated well. Results obtained showed significant reduction (99.99%) in both the faecal and total coliform counts within 4-6 h, with no subsequent reactivation of growth after 24 h. The disinfected water complied in terms of bacteriological quality, with both the South African Bureau of Standards, drinking water standards and the South African Water Quality guidelines for domestic use as prescribed by the Department of Water Affairs and Forestry. The rate of bacterial reduction depended on various parameters, including the type and colour of plastic containers used, initial concn. of micro-organisms in the drawn water, irradiation levels of **UV-A** and **UV-B** rays, O.sub.2 concn. and distribution in the water containers, and the presence of visible turbidity. It is concluded that the SOLAIR technique could prove to be an

efficient and an economically feasible method for disinfection of water drawn from untreated sources to an acceptable potable standard.

CC H (Alcoholic and Non-Alcoholic Beverages)

CT DISINFECTION; DRINKING WATER; **FOOD SAFETY BEVERAGES**;
MICROBIOLOGICAL QUALITY; **ULTRAVIOLET RADIATION**; BACTERIOLOGICAL
QUALITY; SOUTH AFRICA; **UV RADIATION**; WELL WATER

L6 ANSWER 3 OF 35 FSTA COPYRIGHT 2002 IFIS

AN 1998(02):H0293 FSTA

TI Incidence and survival of *Aeromonas* sp. in drinking water production plants.

Verspreiding en overleving van *Aeromonas* sp. in drinkwaterproductiecentra.

AU Kersters, I.

CS Rijksuniv., Ghent, Belgium

SO Dissertation Abstracts International, C, (1997, publ. 1996), 58 (3) 890
200pp.

ISSN: 0307-6075

DT Dissertation

LA English

AB To assess risks from *Aeromonas* contamination of drinking water, aeromonads in several surface water and groundwater samples were compared with occurrence of standard indicator microorganisms. *Aeromonas* counts in untreated groundwater were relatively low, rising to 10.sup.4-10.sup.6 cfu l.sup.-1 in open reservoirs. A single water treatment process (flocculation-decantation, rapid sand filtration, slow sand filtration, or activated C filtration) removed both aeromonads and indicator organisms to the same degree. Certain filter systems provided conditions favouring growth of aeromonads. At least 19% of strains detected belonged to the genome most pathogenic to mice. Inactivation of *Aeromonas* by the current technologies used in Flanders for drinking water treatment is insufficient without disinfection, so chlorination remains necessary, although alternatives are sought (e.g. photocatalysis using long wave-irradiated TiO.sub.2 pellets or direct UV irradiation). Aerated groundwater containing high concn. of Fe.sup.2.sup.+ showed bactericidal properties, initial die-off being related to production of reactive oxygen species via the Fenton reaction. [From En summ.]

CC H (Alcoholic and Non-Alcoholic Beverages)

CT AEROMONAS; DRINKING WATER; **FOOD SAFETY BEVERAGES**

L6 ANSWER 4 OF 35 FSTA COPYRIGHT 2002 IFIS

AN 1997(01):H0159 FSTA

TI Effects of chlorination on THMs formation in raw water.

AU Chang, E. E.; Su-Hui Chao; Pen-Chi Chiang, Jiunn-Fwu Lee

CS Dep. of Analytical Chem., Taipei Med. Coll., Taipei, Taiwan

SO Toxicological and Environmental Chemistry, (1996), 56 (1/4) 211-225, 12
ref.

ISSN: 0277-2248

DT Journal

LA English

AB Chlorine is commonly used as an effective disinfectant in drinking water treatment. However, potentially hazardous trihalomethanes (THM) can be formed as disinfection by-products resulting from chlorine reactions with organic compounds. Effects of chlorination on THM formation, and correlation between chlorine demand and other water quality parameters were investigated. Untreated water quality was determined, and the THM formation potential was evaluated by chlorine dosing samples, and analysis at selected times after dosing by HP5890 GC with ECD. Chloroform was the most common species of THM, and formed rapidly in the first few hours and more slowly thereafter. Bromo-THM were present in lower concn., and bromoform was not detectable in most observations. Bromo-substitution was interfered with by chlorine competition, and the formation of chlorodibromomethane during higher chlorine dose reactions was affected. A

statistical model of THM formation was successfully developed in terms of chlorine contact time, residual chlorine, total organic carbon and UV.sub.2.sub.5.sub.4. Principal factors affecting chlorine demand were chemical **oxygen** demand, total organic carbon, total microbial count and NH.sub.3 (and/or Mn) representing inorganic ions. It is concluded that it is possible to develop an empirical formula to determine chlorine demand based on the analytical results of these factors.

CC H (Alcoholic and Non-Alcoholic Beverages)
CT DISINFECTION; DRINKING WATER; FOOD SAFETY; **FOOD SAFETY BEVERAGES**
; HYGIENE; ORGANIC HALOGEN COMPOUNDS; CHLORINATION; TRIHALOMETHANES

L6 ANSWER 5 OF 35 FSTA COPYRIGHT 2002 IFIS

AN 1996(12):J0088 FSTA

TI Factors affecting the photooxidative stability of soymilk.

AU Sang-Hwa Lee

CS Dep. of Food & Nutr., Seowon Univ., Cheongju 360-742, Korea

SO Journal of the Korean Society of Food and Nutrition, (1996), 25 (3)
441-452, 38 ref.

DT Journal

LA English

AB Effects of chlorophyll, tocopherols (.alpha.-tocopherol, .gamma.-tocopherol and .delta.-tocopherol), carotenoids (.beta.-carotene and lutein), light sources, light intensities and storage temp. on the photooxidative stability of soymilk were studied by measuring TBA value and depleted headspace **oxygen** (DHO) of soymilk. Samples were stored in a light storage box for 6 days and evaluated for photooxidative stability. As the concn. of chlorophyll in soymilk increased, TBA value and DHO of soymilk increased significantly ($P < 0.05$), indicating that chlorophyll was acting as a photosensitizer. However, as the concn. of tocopherols and carotenoids increased, TBA values and DHO of soymilk samples decreased significantly ($P < 0.05$). No light screening effects of carotenoids on the oxidative stability of soymilk were observed. Results indicate that tocopherols and carotenoids reduce the photooxidative stability of soymilk. .delta.-Tocopherol was the most effective in photosensitized oxidation followed by .gamma.- and .alpha.-tocopherols in the order of increasing stability. .beta.-Carotene was significantly ($P < 0.05$) more effective than lutein in minimizing the chlorophyll-sensitized photooxidation of soymilk. Visible light was more effective than UV light in decreasing the photooxidative stability of soymilk. Therefore, photooxidation of soymilk containing chlorophyll is mainly due to photosensitized oxidation rather than photolysis reaction. As intensities of fluorescence light increased, TBA values and DHO of soymilk samples increased significantly at ($P < 0.05$). However, as the storage temp. increased, TBA values and DHO of soymilk did not change significantly ($P > 0.05$). [From En summ.]

CC J (Fruits, Vegetables and Nuts)

CT **BEVERAGES**; OXIDATION; SOY PRODUCTS; VEGETABLE PRODUCTS;
PHOTOOXIDATION; SOYMILK

L6 ANSWER 6 OF 35 FSTA COPYRIGHT 2002 IFIS

AN 1993(11):A0123 FSTA

TI Methods and compositions for **oxygen** scavenging.

IN Speer, D. V.; Roberts, W. P.; Morgan, C. R.

PA W. R. Grace & Co.; W. R. Grace, New York, NY, USA

SO United States Patent, (1993)

PI US 5211875

PRAI US @@@@-722067 19910627

DT Patent

LA English

AB A method of initiating **oxygen** scavenging by compositions which comprise oxidizable organic compounds and transition metal catalysts is

presented. The composition, consisting of a substituted or unsubstituted ethylenically unsaturated hydrocarbon and a transition metal catalyst, is exposed to radiation (electron beam or UV light). Inclusion of a photoinitiator or antioxidant in the scavenging composition facilitates and/or controls the composition's scavenging properties. **Oxygen** scavenging can be initiated in packaging layers or articles for **oxygen** sensitive food or **beverages**. [From En summ.]

CC A (Food Sciences)

CT **BEVERAGES**; GASES; MINERALS; **OXYGEN**; PATENTS; FOODS; O2

L6 ANSWER 7 OF 35 FSTA COPYRIGHT 2002 IFIS

AN 1991(02):H0083 FSTA

TI Quantitation of total anthocyanins in fruit **juices** using differential pulse voltammetry and spectrophotometry.

AU Pospisil, J.; Grabaric, B. S.; Lovric, T.; Marijanovic, M.

CS Lab. of General & Inorganic Chem., Fac. of Tech., Univ. of Zagreb; 4100 Zagreb, Yugoslavia

SO Monatsschrift fuer Brauwissenschaft, (1990), 43 (8) 268-273, 17 ref.

DT Journal

LA English

SL German; French

AB Comparative studies were conducted on detn. of anthocyanins in fruit **juices** by differential pulse voltammetry (DPV) and spectrophotometry with a UV/VIS instrument (SPV). Samples of blueberry, blackberry, strawberry and sour cherry **juices** were analysed; they were adjusted to pH 1 with sodium citrate/HCl before analysis. The method of standard additions was used, with cyanidin-3,5-diglucoside and cyanidin-3-monoglucoside as standards. The two methods generally agreed well; however, DPV was more sensitive and selective than SPV. The method of standard additions is recommended, as the responses to a given amount of added pigment differed between a solution of constant pH and fruit **juice**. This method was applied to evaluation of the stability of anthocyanins in blackberry **juice** stored at 25.degree.C for 115 h in the presence or absence of O.sub.2, ascorbic acid or Cu.sup.2.sup.+ ions. The results show that both ascorbic acid and Cu.sup.2.sup.+ promoted decomposition of anthocyanins.

CC H (Alcoholic and Non-Alcoholic Beverages)

CT ANALYTICAL TECHNIQUES; ANTHOCYANINS; ASCORBIC ACID; COPPER; DECOMPOSITION; **FRUIT JUICES**; IONS; **JUICES**; MINERALS; **OXYGEN**; PIGMENTS; SPECTROSCOPY; VITAMINS; VOLTAMMETRY; CU; O2

L6 ANSWER 8 OF 35 FSTA COPYRIGHT 2002 IFIS

AN 1986(12):T0030 FSTA

TI [Use of cyclodextrin in foods.]

AU Okada, M.

CS Fine Chemical Div., Nihon Shokuhin Kogyo KK, Japan

SO New Food Industry [Nyu Fudo Indasutori], (1984), 26 (8) 22-26, 59 ref.

DT General Review

LA Japanese

AB Characteristics of crystalline cyclodextrin products .alpha.-cyclodextrin (.alpha.-CD), .gamma.-CD and .beta.-CD (trade names 'Serutekusu' [?Celtex], Celtex N and P) and liquid mixtures of the 3 called Celtex CH-20 and CH-30 (DE 20 and 30, resp.) and CH-30H (containing reducing sugar alcohols instead of reducing sugars) are outlined with tables. Cyclodextrins are claimed to stabilize volatile or light/UV radiation/**oxygen**-sensitive constituents and mask unpleasant flavours, and to act as emulsifiers. The references, all but 2 of which are to Japanese patents (mainly unexamined) from 1976 to 1984, cover use of cyclodextrins as a flavouring, flavour-fixing agent or colouring; in fatty foods; as a base for dried foods (particularly alcohol-containing foods, also yeast extract, instant tea and coffee extract); in livestock products and seafoods (enhancing the taste of sodium caseinate and other

protein products, to improve whipping of eggs, in film packaging for meat); in soy products (to improve the taste of natto); in confectionery products; in fruit juices (as a clarifier and flavour masking agent); as a food preservative (e.g. enhancing the preserving power of ethanol); to enhance growth of bifidobacteria in health foods; to improve the quality of rice products; and to mask the taste of steviosides and aspartame.

CC T (Additives, Spices and Condiments)

CT ADDITIVES; DEXTRINS; FUNCTIONAL PROPERTIES; REVIEWS; CYCLODEXTRINS; FOODS; REVIEW

L6 ANSWER 9 OF 35 FSTA COPYRIGHT 2002 IFIS

AN 1981(02):H0303 FSTA

TI [Water for soft **drink** production.]

AU Arena, C.

SO Industrie delle Bevande, (1979), 9 (5) 348-350, 8 ref.

DT Journal

LA Italian

AB Italian legal requirements for water used in manufacturing soft **drinks** are reviewed, including norms for total residues of mineral salts and organic substances (300 mg/l), total alkalinity in g of CaCO₃/l (0.250), and contents of Fe, Mn, Cu, Zn, Ca, Mg, SO₄, Cl, NO₃, and NH₄ (max. 0.100, 0.100, 1, 5, 55, 80, 100, 150, 30, 0 and 0.500 mg/l, resp.). Dissolved **oxygen** permitted is 10 mg/l, and pH shall be 6.7-8.5. Degree of hardness may not exceed 35 degrees (French measure). Consequences of exceeding these norms are considered, especially as regards sensory qualities, and procedures recommended to counteract such excesses are discussed, viz. filtration, disinfection, chlorination, **UV** radiation and oxygenation.

CC H (Alcoholic and Non-Alcoholic Beverages)

CT **BEVERAGES; SOFT DRINKS; WATER**

L6 ANSWER 10 OF 35 FSTA COPYRIGHT 2002 IFIS

AN 1973(02):F0052 FSTA

TI A plastics beer pack for the 'take-away' market.

AU Anon.

CS ICI Plastics Div., Bessemer Road., Welwyn Garden City, Herts, UK

SO Packaging, (1972), 42 (506) 15, 17-18

DT Journal

LA English

AB The Merolite pack, a plastics disposable container for beer and other carbonated **beverages**, is described. Made from a seamless tube of high strength biaxially oriented polyethylene terephthalate coated with a vinylidene chloride copolymer barrier resin, it has very low O₂ and CO₂ permeability and specially constructed end closures. It is filled in a novel patented way with pre-pasteurized liquid through a hole in the side without release of pressure and with min. exposure to air or machine surface (thereby dispensing with post-pasteurization). A filled and sealed pack is reinforced by a paper sleeve which enables it to withstand carbonation pressure of beer and overload conditions (e.g. 100.degree.F for reasonable periods), provides rigidity after opening, decoration/identification and **UV** protection of contents. Production time is 10 sec/pack. The filling and wrapping processes and overall line layout are shown diagrammatically.

CC F (Packaging)

CT **BEER; BEVERAGES; CARBON DIOXIDE; LAMINATES; OXYGEN;**

PACKS; PAPER; PERMEABILITY; PLASTICS; POLYETHYLENE; SOFT DRINKS;

CARBONATED BEVERAGES; CO₂; COPOLYMER; LAMINATE; O₂; PACK; PLASTICS

(FILMS); POLYETHYLENE TEREPHTHALATE; POLYVINYLIDENE CHLORIDE; PVDC;

SLEEVE; TEREPHTHALATE; VINYLIDENE CHLORIDE; VINYLIDENE CHLORIDE COPOLYMER

L6 ANSWER 11 OF 35 FSTA COPYRIGHT 2002 IFIS

AN 1971(11):F0775 FSTA
 TI [Packaging fruit **juices** in thermoformed containers.]
 AU Leiris, J.-P. de
 SO Industries Alimentaires et Agricoles, (1970), 87 (5) 561-567, 8 ref.
 DT Journal
 LA French
 SL German; English
 AB Factors to be considered when using thermoformed plastics for packaging fruit **juices**, e.g. composition of fruit **juice**, thermal treatment of **juice**, characteristics of a suitable container, choice of plastics material and thermoforming of the container, are discussed. Tables summarize the physical characteristics (mol. wt., density, **UV** transmission, permeability to water, O.sub.2, N.sub.2 and CO.sub.2, resistance to rupture, stretch and shock, heat conductivity, temp. range, reaction to weak and strong acids and alkalis and to organic solvents), price, mechanical properties, advantages and disadvantages, and cost/m.sup.2 material of PVC (standard and PVC/C grade), polyethylene (high and low density), polypropylene, impact-resistant polystyrene and ABS.

CC F (Packaging)
 CT ACIDS; ALKALIES; CARBON DIOXIDE; CONTAINERS; DENSITY; **FRUIT JUICES**; HEATING; MECHANICAL PROPERTIES; NITROGEN; **OXYGEN**; PACKAGING; PACKS; PERMEABILITY; PHYSICAL PROPERTIES; PLASTICS; POLYETHYLENE; POLYSTYRENE; POLYVINYL CHLORIDE; STRENGTH; TEMPERATURE; **ULTRAVIOLET RADIATION**; WATER; ABS; ACID; ALKALI; CO2; CONDUCTIVITY; HEAT; HEAT TREATMENT; MOL. WT.; MOLECULAR WEIGHT; N2; O2; POLYPROPYLENE; PVC; RESISTANCE; THERMOFORMED; TRANSMISSION; **ULTRAVIOLET**; **UV**

L6 ANSWER 12 OF 35 FSTA COPYRIGHT 2002 IFIS
 AN 1971(09):F0687 FSTA
 TI [Effect of plastics on foods.]
 Beeinflussung von Lebensmitteln durch Kunststoffe.
 AU Rudt, U.
 CS Chem. Landesuntersuchungsanstalt, Stuttgart, W. Germany
 SO Gordian, (1971), 71 (4) 102-05; (5) 141-45, 24 ref.
 DT Journal
 LA German
 SL English
 AB A comprehensive review of the effects of packaging foods and **beverages** in plastics materials is given. The chemical and physical structure of the most important polymers is briefly indicated. Effects of permeability of plastics to water vapour, O.sub.2, light and odours and of migration of plastics components and food constituents are illustrated with examples from the literature. Aspects of physical, chemical, microbiological, organoleptic and toxicological changes are discussed. Methods of reducing permeability through use of laminated films, **UV** absorbants and correct choice of materials are explained. A migration test for measuring interaction between foods and packaging material is described.

CC F (Packaging)
 CT AROMA; CONTAMINATION; FILMS; GASES; LAMINATES; LIGHT; MICROBIOLOGY; **OXYGEN**; PACKAGING; PACKAGING MATERIALS; PERMEABILITY; PLASTICS; PLASTICS FILMS; RADIATION; SENSORY PROPERTIES; TOXICITY; **ULTRAVIOLET RADIATION**; WATER; FOOD # COMPONENTS; FOODS; LAMINATION; MICROBIOLOGICAL; O2; ODOURS; ORGANOLEPTIC; ORGANOLEPTIC PROPERTIES; PACKAGED; PLASTICS (FILMS); REDUCE; SMELL; TOXICOLOGICAL; **ULTRAVIOLET**; **UV**; **UV RADIATION**; VAPOUR; WATER VAPOUR

L6 ANSWER 13 OF 35 FROSTI COPYRIGHT 2002 LFRA
 AN 576284 FROSTI
 TI New technology or just building a better widget.

AU Newman P.
SO Meat Processing, 2002, (January-February), 28-30 (0 ref.)
Published by: Watt Publishing Co. Address: 122 S. Wesley Ave., Mt.
Morris, IL 61054-1497, USA Telephone: +1 (815) 734 4171 Fax: +1 (815)
734 9091 Web: www.wattnet.com
ISSN: 0025-6390

DT Journal
LA English

AB Developments in processing equipment shown at the AMI Worldwide Food Expo in Chicago during October 2001 are discussed, with particular reference to meat processing applications. TetraPak has recognized the need for aseptic operations for dairy, **beverage** and liquid food products. Bottle cap innovation and technology included a scavenging bottle cap to extend the shelf life of **oxygen**-sensitive products such as fresh fruit **juices** and the Intelligent cap from Berry Plastics. Food safety, monitoring, automation, sanitation and shelf life issues are outlined. Problems of frozen meat include the presence of ice, which makes it difficult to measure any compositional or contaminant property. The Safeline AVS T42 is a new fat measurement system that combines X-ray and image analysis. Moisture measurement on-line using a two-inch cell from ABB-Bomem is being developed. Improved rapid and more controllable cooking systems using combinations of hot air, infrared and microwaves for thawing of meat are detailed. Irradiation technology, pasteurizing systems for cooked meats, a **UV** system for decontaminating marinades and brines, a range of self-cleaning systems, and a self-sterilizing and self-monitoring conveyor system are detailed. A high-resolution ink-jet system, a continuous dual filler system and a portion cutter system have been developed.

SH PROTEINS
CT ASEPTIC PROCESSING; BOTTLES; CAPS; CLOSURES; CONTAINERS; DAIRY PRODUCTS; DETERMINATION; DEVELOPMENTS; EQUIPMENT; EXHIBITIONS; FATS; FOOD SAFETY; FROZEN FOODS; FROZEN MEAT; IRRADIATION; MEAT; MEAT PRODUCTS; PACKAGING CONTAINERS; PACKAGING PRODUCTS; PASTEURIZATION; PRESERVED FOODS; PROCESSING; PROCESSING EQUIPMENT; SAFETY; THAWING

DED 5 Mar 2002

L6 ANSWER 14 OF 35 FROSTI COPYRIGHT 2002 LFRA
AN 551278 FROSTI
TI Sterilization.
IN Castberg H.B.; Chant N.A.
PA Elopak Systems AG
SO European Patent Application
PI EP 1080734 A2
AI 19890504
PRAI United Kingdom 19880505
DT Patent
LA English
SL English

AB Packaging containers may be sterilized by treatment with **UV** radiation in an ozone atmosphere. Use of an appropriate wavelength allows all microorganisms present to be destroyed. The ozone may be produced by subjecting air to a photoflux in the vacuum **UV** range. The **oxygen** in the air is ionized and forms a variety of activated **oxygen** compounds with a higher oxidation potential than that of ozone produced by classical methods. The process may be used to sterilize the inner surfaces of **beverage** containers such as the cartons used for long-life milk and orange **juice** in a relatively short period of time.

CT ACTIVE **OXYGEN** COMPOUNDS; **BEVERAGE** CONTAINERS; CARTONS; CONTAINERS; DECONTAMINATION; EUROPEAN PATENT; OZONE; PACKAGING CONTAINERS; PACKAGING PRODUCTS; PATENT; PROCESSING; STERILIZATION;

UV IRRADIATION

DED 3 May 2001

L6 ANSWER 15 OF 35 FROSTI COPYRIGHT 2002 LFRA
AN 550530 FROSTI
TI Applications of ZERO2 **oxygen** scavenging films for food and
beverage products.
AU Rooney M.L.
SO International Conference on Active and Intelligent Packaging, Chipping
Campden, September 2000., Published by: CCFRA, Chipping Campden, 2000,
16pp (0 ref.)
Campden and Chorleywood Food Research Association
NTE REFERENCE ONLY
DT Conference Article
LA English
AB **Oxygen**-scavenging plastic packaging products (ZERO2) have been
developed by CSIRO and Southcorp Packaging in Australia. The plastic
packaging is activated by **UV** or high-energy processes and is
considered to be suitable for the removal of headspace **oxygen**
and **oxygen** that permeates through the packaging during storage.
Examples of food products and **beverages** that have benefited
from ZERO2 are outlined. Diagrams of the visual aids used during the
presentation of this paper at the conference supplement the text.
SH PACKAGING
CT APPLICATIONS; **OXYGEN** SCAVENGERS; **OXYGEN** SCAVENGING
PACKAGING PRODUCTS; PACKAGED FOODS; PACKAGING PRODUCTS; SCAVENGERS; ZERO2
DED 27 Apr 2001

L6 ANSWER 16 OF 35 FROSTI COPYRIGHT 2002 LFRA
AN 527729 FROSTI
TI Bottle sterilization method and apparatus.
IN Frisk P.
PA Tetra Laval Holdings and Finance SA
SO European Patent Application
PI EP 1003674 A1
WO 9908933 19990225
AI 19980730
PRAI United States 19970815
DT Patent
LA English
SL English
AB A process and equipment are described for sterilizing a container that is
subsequently filled with milk, **juice**, soup, yoghurt, or a
similar pumpable food product. The containers are preferably bottles
that undergo high-speed aseptic filling. **UV** radiation is used
to transform **oxygen** from an **oxygen** source into ozone
in a fill pipe. The ozone flows into the container to achieve
sterilization without being degraded during transport to the container.
The **UV** radiation source is preferably an excimer lamp.
Contamination is minimized in bottles thus sterilized, without the need
for an entirely sterile environment for operating the filling machine.
CT ASEPTIC BOTTLING; ASEPTIC FILLING; ASEPTIC PROCESSING; BOTTLES; BOTTLING;
CONTAINERS; ELECTROMAGNETIC RADIATION; EQUIPMENT; EUROPEAN PATENT;
FILLING; LIQUID FOODS; OZONE; PACKAGING; PACKAGING CONTAINERS; PACKAGING
EQUIPMENT; PACKAGING PRODUCTS; PATENT; PROCESSING; STERILIZATION;
STERILIZATION EQUIPMENT; **UV** RADIATION
DED 14 Jul 2000

L6 ANSWER 17 OF 35 FROSTI COPYRIGHT 2002 LFRA
AN 521092 FROSTI
TI Effect of skin contact and oxygenation of musts on the composition of
white port wines.

AU Ho P.; Rogerson F.S.S.; Watkins S.J.; Silva M.C.M.; Hogg T.A.;
Vasconcelos I.
SO Sciences des Aliments, 1999, 19 (6), 687-699 (31 ref.)
ISSN: 0240-8813
DT Journal
LA English
SL French; English
AB Increasing skin contact and use of hyperoxidation have been applied to wine-making procedures in an attempt to improve the quality of white wines. In this study, musts prepared from Malvasia Fina and Rabigata grapes, grown in northern Portugal, were macerated for various times before being transferred to tanks, where they were either left exposed to air or oxygenated by bubbling **oxygen** through. White port wines were prepared from the musts and aged in oak casks. The wines were analysed at various stages during preparation and ageing for levels of browning, total phenolics, hydroxycinnamoyl tartaric acids, flavonoids and monoterpene alcohols, using **UV** and visible spectroscopy, HPLC and GC. A combination of increased skin contact time and hyperoxidation was effective in increasing levels of monoterpene alcohols in the wines and limiting the amount of hydroxycinnamic acids and